

WHAT IS CLAIMED IS:

1     **1.**    A multilayer panel comprising a core having first and  
2            second base surfaces, at least a first cover ply covering  
3            said first base surface and at least one second cover ply  
4            covering said second base surface, a first plurality of  
5            curved slots extending in a first direction in said core,  
6            a second plurality of curved slots extending in a second  
7            direction in said core, said first and second directions  
8            crossing each other at angles other than right angles, and  
9            wherein said first plurality of curved slots and said  
10           second plurality of curved slots comprise curvatures curved  
11           in space, so that first slots of said first plurality of  
12           slots have a first spacing (k) from one another, so that  
13           second slots of said second plurality of slots have a  
14           second spacing (k<sub>1</sub>) from each other, and so that said first  
15           and second slots have a varying slot depth (t) within said  
16           core (2).

1     **2.**    The multilayer panel of claim 1, wherein said first spacing  
2           (k) and second spacing (k<sub>1</sub>) are on-center spacings between  
3           neighboring curved slots.

1     **3.**    The multilayer panel of claim 1, wherein said curved slots  
2           have a three-dimensionally meandering wavy configuration  
3           with peaks (P) and valleys (V) so that said varying slot  
4           depth (t) reaches its maximum depth (t<sub>m</sub>) in said valleys  
5           (V).

- 1     **4.**     The multilayer panel of claim 1, wherein said curved slots  
2             extend uninterrupted from one edge of said multilayer panel  
3             to an opposite edge of said multilayer panel.
- 1     **5.**     The multilayer panel of claim 1, wherein said curved slots  
2             comprise curved slot sections arranged in rows thereby  
3             forming said curved slots.
- 1     **6.**     The multilayer panel of claim 5, wherein said curved slot  
2             sections have a waveform with said varying slot depth ( $t$ )  
3             reaching a maximum slot depths ( $t_m$ ) in valleys (V) of said  
4             waveform and a minimum slot depth at peaks (P) of said  
5             waveform.
- 1     **7.**     The multilayer panel of claim 6, wherein said minimum slot  
2             depth of said curved slot sections is zero at said peaks so  
3             that said peaks contact a respective cover ply of said  
4             first and second cover plies.
- 1     **8.**     The multilayer panel of claim 1, wherein said first and  
2             second spacings ( $k$ ,  $k_1$ ) between neighboring curved slots  
3             have a constant length.
- 1     **9.**     The multilayer panel of claim 1, wherein said first and  
2             second spacings ( $k$ ,  $k_1$ ) between neighboring curved slots  
3             have individual different spacing lengths.

- 1     **10.**   The multilayer panel of claim 1, wherein each of said base  
2           surfaces of said core has a given total surface area and  
3           wherein said curved slots are taking up a portion of said  
4           total surface area.
- 1     **11.**   The multilayer panel of claim 1, wherein said core has a  
2           given core thickness (c), and wherein said varying slot  
3           depth (t) is smaller than said given core thickness.
- 1     **12.**   The multilayer panel of claim 1, wherein said curved slots  
2           have a slot width (z) that is sufficiently small relative  
3           to said varying slot depth (t) for preventing trench breaks  
4           in said panel.
- 1     **13.**   The multilayer panel of claim 1, wherein said curved slots  
2           have a slot width (z) that varies along a respective slot.
- 1     **14.**   The multilayer panel of claim 13, wherein said slot width  
2           (z) varies within a range of e.g. 40 to 60 mm.
- 1     **15.**   The multilayer panel of claim 1, wherein said curved slots  
2           have a slot bottom curvature (10) formed of parabola tips  
3           arranged in a respective row.
- 1     **16.**   The multilayer panel of claim 15, wherein said parabola  
2           tips point alternately in opposite directions along said  
3           respective row.

1     **17.** The multilayer panel of claim 15, wherein said parabola  
2         tips have a height  $h$ , measured from a peak (P), of about 50  
3         mm.

1     **18.** The multilayer panel of claim 1, wherein said curved slots  
2         have a slot bottom curvature (11) formed of semicircles  
3         arranged in a respective row.

1     **19.** The multilayer panel of claim 18, wherein said semicircles  
2         curve alternately in opposite directions along said  
3         respective row.

1     **20.** The multilayer panel of claim 18, wherein said semicircles  
2         have a radius of about 50 mm.

1     **21.** The multilayer panel of claim 1, wherein all curved slots  
2         have a constant slot width ( $z$ ) independently of said  
3         varying slot depth ( $t$ ).